

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF SOUTH CAROLINA
COLUMBIA DIVISION**

THE SOUTH CAROLINA STATE
CONFERENCE OF THE NAACP, *et al.*,

Plaintiffs,

v.

THOMAS C. ALEXANDER, *et al.*,

Defendants.

Case No. 3:21-cv-03302-MGL-TJH-RMG

**SENATE DEFENDANTS' & HOUSE
DEFENDANTS' MOTION IN LIMINE TO
EXCLUDE THE TESTIMONY OF
PLAINTIFFS' PUTATIVE EXPERT
MOON DUCHIN**

The Senate Defendants and the House Defendants¹ respectfully move to exclude the testimony of Plaintiffs' putative expert Moon Duchin on the ground that it fails to meet the demanding standards established by Federal Rule of Evidence 702 and *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993). Dr. Duchin lacks a "reliable foundation" for her proposed testimony regarding the Congressional Plan that Plaintiffs challenge in this action. *Daubert*, 509 U.S. at 597. Indeed, Dr. Duchin committed the same fundamental error as the putative expert that this Court rejected ten years ago in *Backus v. South Carolina*: by her own admission, Dr. Duchin "failed to consider all the traditional race-neutral principles that guide redistricting in South Carolina." *Backus v. South Carolina*, 857 F. Supp. 2d 553, 563 (D.S.C.), *aff'd*, 568 U.S. 801 (2012). Thus, her proposed testimony and evidence are "problematic," "incomplete," and "unconvincing," and she is "unable to provide the Court a reliable opinion that

¹ The Senate Defendants are Thomas C. Alexander, in his official capacity as President of the Senate, and Luke A. Rankin, in his official capacity as Chairman of the Senate Judiciary Committee. The House Defendants are James H. Lucas, in his official capacity as Speaker of the House of Representatives, Chris Murphy, in his official capacity as Chairman of the House of Representatives Judiciary Committee, and Wallace H. Jordan, in his official capacity as Chairman of the House of Representatives Elections Law Subcommittee. On May 12, 2022, James H. Lucas stepped down as Speaker of the South Carolina House of Representatives. The current Speaker of the House is Representative G. Murrell Smith, Jr.

the General Assembly subordinated traditional race-neutral principles to race.” *Id.* at 562–63. The Court should exclude Dr. Duchin’s proposed testimony and evidence for this reason alone. *See id.*

The reasons to exclude Dr. Duchin’s proposed testimony and evidence do not end there. Even when Dr. Duchin did consider relevant race-neutral districting principles, she did not utilize a “reliable” method to analyze them. *Daubert*, 509 U.S. at 597. In fact, her analysis rests on the legally erroneous (and backwards) premise that rather than being *prevented* from subordinating traditional principles to race, the General Assembly was *required* to do so. And, in all events, Dr. Duchin’s testimony is not “relevant to the task at hand” because it at most pertains to hypothetical circumstances that do not even remotely resemble the actual circumstances surrounding the enactment of the Congressional Plan—the “pertinent inquiry” here. *Id.* at 597. The Court should exclude Dr. Duchin’s testimony and evidence.²

BACKGROUND

Dr. Duchin is a mathematics professor at Tufts University who filed a report, a rebuttal report, and a supplemental report in this case. *See* Duchin Rep. 2 (Ex. 1).³ Plaintiffs have proffered Dr. Duchin as an expert and intend to call her as a witness at trial. Dkt. No. 331 at 1.

Dr. Duchin seeks to offer testimony and evidence regarding her algorithmic “ensemble method” for analyzing the Congressional Plan. Duchin Rep. 22, 27 (Ex. 1). Through the ensemble method, Dr. Duchin “construct[ed] large numbers of sample plans” for comparison with the Congressional Plan in a purported effort to isolate the role of race in the Congressional Plan. *Id.*

² Because this motion contains a full explanation, a supporting memorandum would serve no useful purpose. *See* Local Civil Rule 7.04 (D.S.C.). Further, after consultation, Plaintiffs declined to withdraw Dr. Duchin as an expert. *See* Local Civil Rule 7.02 (D.S.C.).

³ The Senate Defendants and the House Defendants have moved to strike the portions of Dr. Duchin’s supplemental report analyzing the irrelevant Jessamine Plan. *See* Dkt. No. 321. That motion remains pending.

at 22. Based on her ensemble method, Dr. Duchin seeks to opine that “racial factors predominated” and black voters experienced “clear [vote] dilution” under the Congressional Plan. *Id.* at 22, 27.

The “ensemble method” involved Dr. Duchin programming an algorithm to generate thousands of “ensemble plans.” But she programmed the algorithm to consider only certain traditional race-neutral districting principles and not others. In particular, she programmed the algorithm to maintain “constant” contiguity and population balance, implement a “preference” for compactness and the preservation of counties and municipalities, and “attempt to prioritize the preservation of certain communities of interest identified in public testimony.” *Id.* at 22. But Dr. Duchin admits that she did not program the algorithm to consider a range of other traditional race-neutral criteria. Duchin Tr. 134:15–21 (Ex. 2). According to Dr. Duchin, the algorithm and the ensemble plans it generates “are neutral with respect to all other properties.” Duchin Rep. 22 (Ex. 1).

Specifically, Dr. Duchin admitted that her analysis does not consider the following traditional race-neutral principles used in redistricting in South Carolina:

- Preserving the cores of districts;
- Avoiding voting district splits;
- Incumbency protection;
- Partisan performance and politics; and
- Maintaining communities of interest other than ones Dr. Duchin deemed important.

Duchin Tr. 67:13–14, 67:25–68:1, 68:5, 75:23–76:25, 135:15–16, 24, 136:5–6 (Ex. 2); *see also Backus*, 857 F. Supp. 2d at 562–63 (identifying traditional districting principles); *Colleton Cnty. Council v. McConnell*, 201 F. Supp. 2d 618, 647, 649 (D.S.C. 2002) (three-judge court) (same); Dkt. No. 323 at 12 (same).

Even with respect to the principles she did consider, Dr. Duchin acknowledged that she did not apply those principles in the same way the General Assembly did when it adopted the Congressional Plan. *See* Duchin Rep. 7–8, 11, 29 (Ex. 1); Duchin Tr. 60:21–24, 125:25–128:6 (Ex. 2). Dr. Duchin’s analysis and opinions rest on the premise that rather than being *prevented* from subordinating traditional districting principles to race, the General Assembly was *required* to do so. *See* Duchin Tr. 207:16–23, 210:5–212:12 (Ex. 2).

LEGAL STANDARD

A party offering expert testimony “has the burden of establishing that the pertinent admissibility requirements are met by a preponderance of the evidence.” Fed. R. Evid. 702 advisory committee’s note (citing *Bourjaily v. United States*, 483 U.S. 171, 176 (1987)). “A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise” if:

- (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702.

These requirements are “exacting.” *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000). Thus, as *Daubert* explains, Rule 702 imposes a “special gatekeeping obligation” on the district court to ensure that an expert’s testimony “rests on a reliable foundation” and “is relevant to the task at hand.” *Sardis v. Overhead Door Corp.*, 10 F.4th 268, 281 (4th Cir. 2021) (quoting *Nease v. Ford Motor Co.*, 848 F.3d 219, 229 (4th Cir. 2017)).

To be reliable, expert testimony must be “‘based on scientific, technical, or other specialized *knowledge* and not on belief or speculation,’” and “to the extent an expert makes inferences based on the facts presented to him,” the inferences must be “‘derived using scientific or other valid methods.’” *Id.* (quoting *Oglesby v. Gen. Motors Corp.*, 190 F.3d 244, 250 (4th Cir. 1999)). The reliability analysis focuses on the expert’s “‘principles and methodology’” and is informed by four “guideposts” set out in *Daubert*: “(1) whether the expert’s theory or technique ‘can be (and has been) tested’; (2) ‘whether the theory or technique has been subjected to peer review and publication’; (3) ‘the known or potential rate of error’ inherent in the expert’s theory or technique; and (4) whether the expert’s methodology is generally accepted in his field of expertise.” *Id.* (quoting *Daubert*, 509 U.S. at 593–95). These guideposts are not exhaustive, however, and courts often consider additional factors, including “whether the expert’s analysis leaves unexplained analytical gaps and whether the expert has reasonably accounted for alternative explanations.” *Nucor Corp. v. Bell*, No. 2:06-CV-02972, 2008 WL 4442571, at *2 (D.S.C. Jan. 11, 2008); see *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 202 (4th Cir. 2001); *In re Pella Corp. Architect & Designer Series Windows Mktg., Sales Pracs. & Prod. Liab. Litig.*, 214 F. Supp. 3d 478, 494 (D.S.C. 2016). In short, because faulty expert testimony can be “quite misleading,” *Daubert* aims to ensure that such testimony is based on “‘intellectual rigor’” rather than the “ipse dixit” of the putative expert. *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, 892 F.3d 624, 631–32 (4th Cir. 2018) (quoting *Kumho Tire Co.*, 526 U.S. at 152); see also *Holesapple v. Barrett*, 5 F. App’x 177, 179 (4th Cir. 2001).

Moreover, to be relevant, expert testimony must have “a valid scientific connection to the pertinent inquiry.” *Sardis*, 10 F.4th at 281 (quoting *Belville v. Ford Motor Co.*, 919 F.3d 224, 232

(4th Cir. 2019)). “This ensures that the expert ‘helps the trier of fact to understand the evidence or to determine a fact in issue.’” *Id.* (quoting *Nease*, 848 F.3d at 228).

ARGUMENT

The Court should exclude Dr. Duchin’s proposed testimony and evidence because Plaintiffs cannot show that they are sufficiently reliable or relevant to satisfy Rule 702, *Daubert*, and its progeny.

I. DR. DUCHIN FAILED TO CONSIDER ALL TRADITIONAL RACE-NEUTRAL PRINCIPLES

Dr. Duchin’s proposed testimony and evidence fail—and should be excluded—at the threshold because she “failed to consider all the traditional race-neutral principles that guide redistricting in South Carolina.” *Backus*, 857 F. Supp. 2d at 563. Thus, Plaintiffs cannot show that her testimony is “based on sufficient facts or data” or “is the product of reliable principles and methods,” or that Dr. Duchin “reliably applied the principles and methods to the facts of the case.” Fed. R. Evid. 702(b)-(d).

Indeed, Dr. Duchin’s proffered testimony lacks “intellectual rigor,” *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, 892 F.3d at 631–32, and does not satisfy the “exacting standards of reliability [it] must meet,” *Sardis*, 10 F.4th at 299 (quoting *Weisgram*, 528 U.S. at 455). After all, her analysis does not “as a matter of logic ... eliminate other equally plausible causes” of the features of the Congressional Plan she observes and therefore is inadmissible. *Goodman v. Revco Disc. Drug Centers, Inc.*, No. 3:03-CV-2657, 2005 WL 6740407, at *4 (D.S.C. Aug. 18, 2005) (quoting *Oglesby v. Gen. Motors Corp.*, 190 F.3d 244, 250 (4th Cir. 1999)); see *Templeton v. Bishop of Charleston*, No. 2:18-CV-02003, 2021 WL 3419442, at *6 (D.S.C. Aug. 5, 2021); *In re Pella Corp.*, 214 F. Supp. 3d 478, 483–85, 498 (D.S.C. 2016); *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, 185 F. Supp. 3d 761, 781–82 (D.S.C. 2016); *Bishop v. Triumph Motorcycles*

(*Am.*) *Ltd.*, No. 3:18-CV-186, 2021 WL 4316810, at *8 (N.D.W. Va. Sept. 22, 2021); *Hall v. Thomas*, 753 F. Supp. 2d 1113, 1149 (N.D. Ala. 2010); *see also In re Wholesale Grocery Prod. Antitrust Litig.*, 946 F.3d 995, 1003 (8th Cir. 2019) (affirming exclusion of expert whose analysis “failed to incorporate economic realities”).

Dr. Duchin proposes to opine that “racial factors predominated” and black voters experienced “clear [vote] dilution” under the Congressional Plan based on her algorithmic “ensemble method.” Duchin Rep. 22, 27 (Ex. 1). But Dr. Duchin admitted that her ensemble method does not consider the following traditional race-neutral principles used in redistricting in South Carolina:

- Preserving the cores of districts;
- Avoiding voting district splits;
- Incumbency protection;
- Partisan performance and politics; and
- Maintaining communities of interest other than ones Dr. Duchin deemed important.

Duchin Tr. 67:13–14, 67:25–68:1, 68:5, 75:23–76:25, 135:15–16, 24, 136:5–6 (Ex. 2); *see also Backus*, 857 F. Supp. 2d at 562–63 (identifying traditional districting principles); *Colleton Cnty*, 201 F. Supp. 2d at 647, 649 (same). Dr. Duchin did not consider these principles even though she specifically *acknowledged* that several were identified in the Senate Guidelines and the House Guidelines and all or some of them may have been *more* significant to the General Assembly than her preferred criteria. Duchin Tr. 134:15–21 (Ex. 2); *see id.* at 70:9–11, 73:12–13, 73:18, 76:2–3, 14–15.

Thus—like the putative expert this Court rejected in *Backus*—Dr. Duchin’s proposed testimony is “problematic,” “incomplete,” and “unconvincing,” and she is “unable to provide the

Court a reliable opinion that the General Assembly subordinated traditional race-neutral principles to race.” *Backus*, 857 F. Supp. 2d at 562–63. The Court should exclude Dr. Duchin’s proposed testimony for this reason alone. *See id.*; *see also* Fed. R. Evid. 702; *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, 892 F.3d at 631–32; *Sardis*, 10 F.4th at 299.

II. DR. DUCHIN DID NOT RELIABLY ANALYZE THE RACE-NEUTRAL CRITERIA SHE DID CONSIDER

Dr. Duchin’s failure to consider all traditional race-neutral principles alone warrants exclusion of her testimony. *See supra* Part I. But Dr. Duchin’s testimony should be excluded on another basis as well: she did not reliably analyze the traditional race-neutral principles she did consider. Thus, her testimony is not “based on sufficient facts or data” or “the product of reliable principles and methods,” and Dr. Duchin did not “reliably appl[y] the principles and methods to the facts of the case.” Fed. R. Evid. 702(b)-(d).

For at least five reasons, Dr. Duchin’s analysis of the traditional race-neutral factors she did consider suffers from major “analytical gaps,” lacks a reliable foundation, and is inadmissible. *In re Pella Corp.*, 214 F. Supp. 3d at 494; *see Nucor Corp.*, 2008 WL 4442571, at *2. First, as Dr. Duchin acknowledged, the Senate Guidelines specifically direct that “a congressional districting plan should not have population deviations greater than one person.” Senate Redistricting Guidelines I.A.2 (Ex. 3). But Dr. Duchin programmed the algorithm to permit population deviations of up to one percent, or approximately 7,300 people, in her ensemble plans. *See* Duchin Rep. 7, 29 (Ex. 1); Duchin Tr. 125:25-128:6 (Ex. 2). None of those plans comports with the Senate Guidelines or would have been adopted by the Senate. *See* Senate Redistricting Guidelines I.A.2 (Ex. 3). Indeed, Dr. Duchin’s failure to consider population balance in accordance with the “the guidelines and criteria that the General Assembly devised” is

“[p]articularly troubling” and prevented her from properly “understanding” the General Assembly’s redistricting decisions. *Backus*, 857 F. Supp. 2d at 562.

Second, Dr. Duchin used three mathematical measures to assess the compactness of the Congressional Plan and the ensemble plans. *See* Duchin Rep. 8, 11 (Ex. 1). But she wholly ignored non-mathematical standards of compactness, despite admitting that the House Redistricting Guidelines “express[ly]” state that compactness “‘should *not* be judged based upon any mathematical, statistical, or formula-based calculation or determination.’” *Id.* at 8 (emphasis added) (quoting House Redistricting Guidelines VI (Ex. 4)); *see also* Duchin Tr. 60:21–24 (Ex. 2). Dr. Duchin failed to justify this approach. She half-heartedly asserted that the Senate Redistricting Guidelines on compactness “shy away from shape considerations entirely,” Duchin Rep. at 8 n.5 (Ex. 1), but that assertion cannot survive a glance at the actual Guidelines, which expressly direct that “geography” should inform compactness and do not “shy away” from anything, *see* Senate Redistricting Guidelines III.F (Ex. 3). Thus, as above, Dr. Duchin’s “troubling” failure to consider compactness in accordance with the “the guidelines and criteria that the General Assembly devised” prevented her from properly “understanding” the General Assembly’s redistricting decisions. *Backus*, 857 F. Supp. 2d at 562.

Third, Dr. Duchin fared no better in analyzing communities of interest. For one thing, Dr. Duchin ignored numerous communities of interest in South Carolina, including the communities of interest formed around the cores of the Benchmark districts. *See Colleton Cnty. Council*, 201 F. Supp. 2d at 649. Instead, Dr. Duchin and her algorithmic ensemble method considered only a few communities of interest that she hand-picked based on her “qualitative” reading of the public testimony. Duchin Tr. 83:10 (Ex. 2); *see* Duchin Rep. 8, 29–30 (Ex. 1). According to Dr. Duchin,

she identified these select communities of interest simply by “read[ing] all of the public testimony and ma[king] a good-faith effort to summarize and synthesize it.” Duchin Tr. 79:23-80:19 (Ex. 2).

Even on its face, this method of reading transcripts and “cherry-picking” preferred communities of interest lacks the “intellectual rigor” necessary to constitute a reliable method and instead merely asserts Dr. Duchin’s “*ipse dixit*.” *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, 892 F.3d at 631–32, 634; *see Hines v. Wyeth*, No. CIV.A. 2:04-0690, 2011 WL 2680842, at *7 (S.D.W. Va. July 8, 2011) (excluding testimony of expert who merely “read[] and summariz[ed]” documents that the trier of fact could review “on its own”); *Lippe v. Bairnco Corp.*, 288 B.R. 678, 688 (S.D.N.Y. 2003) (excluding expert who sought to testify on intent by providing a “summation” of relevant facts); *see also City of Huntington v. AmerisourceBergen Drug Corp.*, No. 3:17-CV-1362, 2021 WL 1320716, at *2 (S.D.W. Va. Apr. 8, 2021) (collecting cases excluding expert testimony that “merely regurgitates” admissible materials). But Dr. Duchin’s method suffers from a range of limitations that further underscore that it is not reliable. Indeed, Dr. Duchin admitted that her method (1) ignored other communities of interest that were “certainly” identified in the public testimony, Duchin Tr. 81:16 (Ex. 2); (2) did not yield a representative sample of the views of South Carolina voters, *id.* at 86:20, 87:5–6, 87:16–18, 88:22; (3) made no attempt to count or otherwise quantify the number of comments or commenters expressing views on the various communities of interest, *id.* at 83:2–10; and (4) has no support in the academic literature, *id.* at 84:22–23. Moreover, Dr. Duchin never reviewed other sources of information regarding communities of interest, such as the legislative record or emails submitted by members of the public after the public hearings were completed in July and August 2021. *See, e.g.*, Duchin Tr. 92:17-24; 183:13-184:1. Far from being “generally accepted,” Dr. Duchin’s made-for-litigation method has never been “tested” or “subjected to peer review” and ultimately

is not based on “scientific, technical, or other specialized knowledge.” *Sardis*, 10 F.4th at 281 (internal quotation marks omitted).

Fourth, in addition to the flaws laid out above, Dr. Duchin admitted that her report did not even attempt to compare the Congressional Plan and ensemble plans with respect to compactness and the preservation of communities of interest. Duchin Tr. 149:19 (Ex. 2). Thus, even on its own terms, Dr. Duchin’s ensemble method did not reliably analyze the role of these traditional principles in the Congressional Plan. *See Backus*, 857 F. Supp. 2d at 563.

Finally, Dr. Duchin fundamentally misunderstood the General Assembly’s obligations to avoid a racial gerrymander. A legislature engages in unconstitutional racial gerrymandering when it “subordinate[s] traditional race-neutral districting principles . . . to racial considerations” without satisfying strict scrutiny. *Miller v. Johnson*, 515 U.S. 900, 916 (1995). Thus, in other words, a legislature is *prohibited* from subordinating traditional principles to race in the absence of constitutionally sufficient justification. *See id.*

Yet that is *precisely* what Dr. Duchin believed the General Assembly was *required* to do in the Congressional Plan. In particular, Dr. Duchin’s opinion that “racial factors predominated” and black voters experienced “clear [vote] dilution” under the Congressional Plan, Duchin Rep. 22 (Ex. 1), rests on the faulty premise that the General Assembly was obligated to “prioritize minority electoral opportunity” even when that goal “conflict[ed]” with traditional districting principles, Duchin Tr. 211:13–19 (Ex. 2); *see id.* at 207:16–23, 210:5–212:12; *see also id.* at 211:16–19 (“So they are directed, in case of conflict, to prioritize minority electoral opportunity over compactness over district cores and so on.”). In light of this supposed obligation, Dr. Duchin reasoned that the General Assembly’s purported failure to “increase[]” minority electoral opportunity violated the General Assembly’s own guidelines and resulted in racial predominance

and vote dilution. Duchin Rep. 27 (Ex. 1). Dr. Duchin thus turned the law on its head: she treated subordination of traditional districting principles as the General Assembly’s *obligation* rather than the constitutional *violation* she purported to be testing for. Duchin Tr. 211:13–19 (Ex. 2); *see id.* at 207:16–23, 210:5–212:12; *see also id.* at 211:16–19. This flawed premise tainted her entire analysis and alone requires exclusion of her testimony. *See Tyger Const. Co. Inc. v. Pensacola Const. Co.*, 29 F.3d 137, 143 (4th Cir. 1994) (requiring exclusion of opinion based on a “faulty assumption”); *In re Lipitor Mktg., Sales Pracs. & Prod. Liab. Litig.*, No. 2:14-MN-02502, 2016 WL 2940784, at *5 (D.S.C. May 6, 2016) (similar); *see also Walker v. Contra Costa Cnty.*, No. 03-C-3723, 2006 WL 3371438, at *4–5 (N.D. Cal. Nov. 21, 2006) (excluding “discriminatory intent” expert because she “misunderst[ood]” the governing law); *Exela Pharma Scis., LLC v. Eton Pharms., Inc.*, No. 20-CV-0365, 2022 WL 806524, at *3 (D. Del. Feb. 8, 2022) (collecting cases excluding expert reports “premised on a misunderstanding of the law”).

III. PLAINTIFFS CANNOT SHOW THAT DR. DUCHIN’S TESTIMONY IS RELEVANT

Plaintiffs’ inability to establish reliability alone warrants the exclusion of Dr. Duchin’s testimony. But the testimony should be excluded for another reason: Plaintiffs cannot show that Dr. Duchin’s analysis is “relevant to the task at hand.” *Sardis*, 10 F.4th at 281. In particular, Plaintiffs cannot demonstrate that Dr. Duchin’s analysis has a “valid scientific connection” to whether the General Assembly committed racial gerrymandering or intentional discrimination in enacting the Congressional Plan. *Id.*

As noted, Dr. Duchin admitted that her ensemble method attempts to control for only a few race-neutral districting principles, namely contiguity, population balance, compactness, and the preservation of counties, municipalities, and certain hand-picked communities of interest. *See supra* Background. In other words, she ignores other traditional race-neutral principles—and fails reliably to analyze even those principles she considered. *See supra* Parts I-II. Thus, to the extent

that Dr. Duchin’s ensemble method is reliable at all, it at most compares the Congressional Plan to the universe of potential plans that the General Assembly hypothetically might have considered if it sought to adhere to only the few curated districting principles that Dr. Duchin considered in the way Dr. Duchin considered them. But that is not relevant here, because no evidence suggests that the General Assembly followed only those few principles; to the contrary, the General Assembly undisputedly adhered to numerous additional race-neutral principles. *See* Dkt. No. 323 at 16–20. Dr. Duchin’s analysis thus lacks a “valid scientific connection” to the General Assembly’s actual redistricting actions in the Congressional Plan. *Sardis*, 10 F.4th at 281.

Put another way, Dr. Duchin’s analysis is at most relevant to understanding hypothetical circumstances that do not remotely resemble the actual circumstances surrounding the enactment of the Congressional Plan. This analysis is not relevant to understanding the Congressional Plan—the “pertinent inquiry” here—and therefore it should be excluded. *Id.*

CONCLUSION

The Court should exclude the testimony of Dr. Duchin.

September 2, 2022

Respectfully submitted,

/s/ Robert E. Tyson Jr.

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